

What is claimed is:

1. A non-contact ID card, comprising an antenna circuit board having an antenna formed on a substrate, and an interposer board having an enlarged electrode, which is connected to an electrode of an IC chip, formed on a substrate on which the IC chip is mounted; the non-contact ID card being formed by laminating both boards in such a manner that an electrode of the antenna and the enlarged electrode are bonded, wherein

both electrodes are adhesively bonded by an insulating adhesive filled in minute recesses dispersed on bonding faces of the electrode of the antenna and/or the enlarged electrode.

2. The non-contact ID card as claimed in claim 1, wherein at least either of the electrode of the antenna and the enlarged electrode is a single layer electrode comprising a resin electrode which is formed by using a conductive adhesive.

3. The non-contact ID card as claimed in claim 1, wherein at least either of the electrode of the antenna and the enlarged electrode is a laminated electrode comprising layers of resin electrodes which are formed by using a plurality of conductive adhesives of various compositions.

4. The non-contact ID card as claimed in claim 1, wherein at least either of the electrode of the antenna and the enlarged electrode is a laminated electrode comprising layers of a metal electrode that is formed on the substrate and a resin electrode that is formed by using a conductive adhesive on the metal electrode.

5. The non-contact ID card as claimed in claim 2, 3, or 4, wherein the conductive adhesive is thermoplastic.

6. The non-contact ID card as claimed in claim 2, 3, or 4, wherein the conductive adhesive is thermoset.

7. The non-contact ID card as claimed in any one of claims 1 to 6, wherein the IC chip is embedded in the substrate.

8. A manufacturing method of a non-contact ID card, comprising the steps of:

laminating an antenna circuit board having an antenna formed on a substrate and an interposer board having an enlarged electrode, which is connected to an electrode of an IC chip, formed on a substrate on which the IC chip is mounted in such a manner that positions of an electrode of the antenna and the enlarged electrode align

applying an insulating adhesive, prior to the laminating process, on at least either of the electrode of the antenna and the enlarged electrode so as to fill insulating adhesive into minute recesses dispersed on a bonding face of the respective electrode, and

pressurizing to tightly make both electrodes contact with each other, and after the laminating process, so that both electrodes are adhesively bonded to each other by the insulating adhesive filled in the minute recesses.

9. A manufacturing method of a non-contact ID card, comprising the steps of:

laminating an antenna circuit board having an antenna formed on a substrate and an interposer board having an enlarged electrode, which is connected to an electrode of an IC chip, formed on a substrate on which the IC chip is mounted in such a manner that positions of an electrode of the antenna and the enlarged electrode align

applying an insulating adhesive, prior to the laminating process, on at least either of the electrode of the antenna and the enlarged electrode, and

pressurizing and heating to tightly make both electrodes contact with each other, after the laminating process, so that the insulating adhesive is filled into the minute recesses dispersed on at least either bonding face of both electrodes, the remainder of the insulating adhesive is squeezed from the close contact portion of the electrodes to the side periphery of the electrodes, and both electrodes are adhesively bonded to each other by the insulating adhesive filled in the minute recesses.

10. The manufacturing method of the non-contact ID card as claimed in claim 9, wherein the step of pressurizing and heating is held by a heat tool.

11. The manufacturing method of the non-contact ID card as claimed in claim 8, 9, or 10, wherein at least either of the electrode of the antenna and the enlarged electrode is a single layer electrode comprising a resin electrode which is formed by using a conductive adhesive.

12. The manufacturing method of the non-contact ID card as claimed in claim 8, 9, or 10, wherein at least either of the electrode of the antenna and the enlarged electrode is a laminated electrode comprising layers of resin electrodes which are formed by using a plurality of conductive adhesives of various compositions.

13. The manufacturing method of the non-contact ID card as claimed in claim 8, 9, or 10, wherein at least either of the electrode of the antenna and the enlarged electrode is a laminated electrode comprising layers of a metal electrode that is formed on the substrate and a resin electrode that is formed by using a conductive adhesive on the metal electrode.

14. The manufacturing method of the non-contact ID card as claimed in any one of claims 8 to 13, wherein the IC chip is embedded in the substrate.